UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

April 27, 2015

Ms. Alicia E. Kirchner
Chief, Planning Division
U.S. Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, California 95814-2922

Subject: Lower San Joaquin River Feasibility Study Draft Environmental Impact Statement / Environmental Impact Report, San Joaquin County, California [CEQ# 20150044]

Dear Ms. Kirchner:

The U.S. Environmental Protection Agency has reviewed the Draft Environmental Impact Statement for the Lower San Joaquin River Feasibility Study. Our review and comments are pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act. We appreciate the additional review time provided by Tyler Stalker to Jean Prijatel on April 1, 2015.

EPA supports the Army Corps of Engineers goal of a durable flood protection system for populations and property in the Lower San Joaquin River study area, and also encourages a broader approach to flood protection and restoration. The Notice of Intent for the project published on January 15, 2010 indicated dual goals of flood damage reduction and ecosystem restoration. We note, however, that this feasibility study has since been limited to analysis of flood risk reduction measures and does not include measures and alternatives for ecosystem and floodplain restoration. The DEIS states that this Feasibility Study is to be called an "Interim Feasibility Report", indicating that additional studies under the Sacramento – San Joaquin Basin Streams, California Comprehensive Study authority can be authorized at a future date (page 1-4). In those future studies, EPA recommends an evaluation of the river and basin for the entire extent of the study area that would identify space and suitable conditions for a range of river flows and functions, including reestablishment of floodplains, establishing flood control basins, and conveying water to wetlands. While the DEIS identifies the primary risk of flooding in the study area to be geotechnical failure of existing levees, EPA encourages future evaluation of increased flood carrying capacity to further reduce flood risk for the entire study area.

Based on our review of the DEIS, we have rated the preferred alternative – Alternative 7a – and the document as *Environmental Concerns – Insufficient Information* (EC-2). Please see the enclosed "Summary of EPA Rating Definitions." We recommend that the Final Environmental Impact Statement include additional information regarding the impacts to water quality and measures that will minimize those impacts. We also recommend committing to additional measures to mitigate for air quality impacts and applying for a variance to the standard USACE vegetation policies. Finally, we recommend that the

FEIS provide additional information about waters of the United States, impacts from climate change, and implications of the President's January 30, 2015 Executive Order 13690 on flood risk management. Please see the enclosed detailed comments for additional concerns and recommendations.

We appreciate the opportunity to review and comment on this DEIS, and are available to discuss the recommendations provided. When the FEIS is released for public review, please send one hard copy and one CD to the address above (Mail Code: ENF 4-2). Should you have any questions, please contact me at (415) 972-3521, or contact Jean Prijatel, the lead reviewer for the project. Jean can be reached at (415) 947-4167 or prijatel.jean@epa.gov.

Sincerely,

Connell Dunning

FOR Kathleen Martyn Goforth, Manager
Environmental Review Section

Enclosures: Summary of EPA Rating Definitions
EPA Detailed Comments

cc: Adam Laputz, Regional Water Quality Control Board (Central Valley Region)
Jeffrey Stuart, National Oceanic and Atmospheric Administration, West Coast Region
Andy Gordus, California Department of Fish and Wildlife
Katherine Perez, Chairwoman North Valley Yokuts Tribe
Silvia Burley, Chairperson California Valley Miwok Tribe

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

U.S. EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR LOWER SAN JOAQUIN RIVER FEASIBILITY STUDY, SAN JOAQUIN COUNTY, CALIFORNIA APRIL 27, 2015

Water Quality

The DEIS discusses Clean Water Act Section 303(d) impairments in the Eastern Delta and the Stockton Deepwater Ship Channel (page 5-44). It identifies potential sources of pollution, lists the impairments, and notes where there are active Total Maximum Daily Load restrictions for these waters. The State Water Resources Control Board's 303(d) list of impaired waters[1] provides additional impairment listings for other water bodies in the study area and the subset of the study area where the preferred alternative proposes levee work and closure structures, including Mosher Slough, Lower Calaveras River, and Smith Canal.

The DEIS acknowledges that water quality eastward of the proposed closure structures on Smith Canal and Fourteenmile Slough would likely degrade with implementation of any of the action alternatives (page 5-48), and identifies this as a significant impact. While these water bodies are on the 303(d) impaired list, the impairments of these water bodies are not specifically discussed in the DEIS and it is unclear which of the listed impairments would be further degraded by implementation of the alternatives. The DEIS states that design and operational criteria for the closure structures would be coordinated with the Regional Water Quality Control Board, National Marine Fisheries Service, and California Department of Fish and Wildlife to minimize water quality impacts.

> ***Recommendations:*** Update the discussion of the 303(d) impaired waters to describe impairments in all water bodies in the study area. Specifically identify which listed impairments would be degraded by the proposed project. In advance of the FEIS, coordinate with the Regional Water Quality Control Board, National Marine Fisheries Service, and California Department of Fish and Wildlife to identify the design and operating criteria that will minimize water quality impacts and commit to those measures in the FEIS and Record of Decision.

Impacts to Waters of the United States

The acreage of wetlands and other waters of the United States identified in the DEIS are not based on a verified jurisdictional delineation. Instead, estimates presented are based on USGS topographic maps, Google Earth Pro, the National Wetland Inventory, and the San Joaquin County Multi-Species Habitat Conservation Plan (page 5-60). EPA's experience is that on-the-ground delineations can be substantially different from estimates based on aerial imagery or maps. The DEIS acknowledges that impacts may be underestimated and states that a formal wetlands delineation will be conducted prior to project construction.

The DEIS includes a draft Clean Water Act 404(b)(1) analysis that includes measures to minimize effects on wetlands and aquatic ecosystems, but does not identify which alternative is the least environmentally damaging practicable alternative. Mitigation measures are proposed to be on-site restoration and purchasing credits from approved mitigation banks.

> ***Recommendations:*** EPA recommends completing a jurisdictional delineation prior to publication of the FEIS and including updated quantity and locations of anticipated impacts to waters of the United States in the FEIS. Identify the least environmentally damaging practicable alternative and commit to compensatory mitigation located as close to the project site as possible to preserve local habitat function.

[1] http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml

Vegetation

The DEIS states that USACE intends to pursue a vegetation variance from the standard vegetation guidelines set forth in the USACE Engineering Technical Letter 1110-2-583 to allow woody vegetation to be retained on the lower two thirds of the waterside slope of project levees, where appropriate (page 5-140). EPA strongly promotes the application for such a variance to preserve important habitat functions and water quality in the study area. The DEIS states that the design refinement phase of the project will include an evaluation of plans to identify further areas to minimize impacts to vegetation including reducing the project footprint, installing exclusion fencing, and worker training. The DEIS also identifies mitigation for impacts including on-site restoration, off-site restoration, and purchasing mitigation credits.

> ***Recommendations:*** In the FEIS, indicate the status of the vegetation variance application. Include mitigation for temporal loss of vegetation and commit to implementing off-site mitigation or purchasing mitigation credits prior to the removal of vegetation.

Air Quality

As noted in the DEIS, the project is within the boundary of the San Joaquin Valley Air Basin, which is classified as extreme nonattainment for ozone and nonattainment for $PM_{2.5}$, and is subject to the EPA General Conformity Rule. The DEIS provides environmental commitments intended to reduce fugitive dust from construction, as required by the San Joaquin Valley Air Pollution Control District, and indicates that implementation of those commitments will reduce the impacts to $PM_{2.5}$ levels to less than significant. The DEIS further states that the action alternatives will be mitigated to reduce NOx emissions below the *de minimus* level of 10 tons per year by either requiring the use of Tier 3 equipment for all off-road vehicles or purchasing NOx emission offsets through a Verified Emission Reduction Agreement (page 5-93). Given the projected twelve year construction schedule for the project, the DEIS includes an expectation that construction fleets will become cleaner over time as vehicles are replaced with newer, lower emitting equipment.

> ***Recommendations***: If applicable, include a copy of an adopted and signed VERA in the FEIS and ROD. In addition to the measures required to meet applicable local, state, and federal requirements, EPA recommends committing to additional on-site mitigation measures, such as the following, to reduce NOx emissions before determining the need to fund off-site mitigation:
>
> Mobile and Stationary Source Controls:
>
> - Minimize use, trips, and unnecessary idling of heavy equipment.
> - Maintain and tune engines per manufacturer's specifications to perform at EPA certification levels, where applicable, and to perform at verified standards applicable to retrofit technologies.
> - Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications. The California Air Resources Board has a number of mobile source anti-idling requirements which should be employed (http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm).
> - Prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations.
> - In general, commit to the best available emissions control technologies for project equipment:

- *On-Highway Vehicles* - On-highway vehicles should meet or exceed the US EPA exhaust emissions standards for model year 2010 and newer heavy-duty on-highway compression-ignition engines (e.g., long-haul trucks, refuse haulers, etc.).[2]
- *Nonroad Vehicles & Equipment* - Nonroad vehicles & equipment should meet or exceed the US EPA Tier 4 exhaust emissions standards for heavy-duty nonroad compression-ignition engines (e.g., construction equipment, nonroad trucks, etc.).[3]
- *Low Emission Equipment Exemptions* – The equipment specifications outlined above should be met unless: 1) a piece of specialized equipment is not available for purchase or lease within the United States; or 2) the relevant project contractor has been awarded funds to retrofit existing equipment, or purchase/lease new equipment, but the funds are not yet available.

Administrative controls:

- Prepare an inventory of all equipment prior to construction.
- Develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow.
- Identify where implementation of mitigation measures is rejected based on economic infeasibility.

Climate Change

On December 24, 2014, the Council on Environmental Quality released revised draft guidance for public comment that describes how federal departments and agencies should consider the effects of greenhouse gas emissions and climate change in their NEPA reviews. The revised draft guidance supersedes the draft greenhouse gas and climate change guidance released by CEQ in February 2010 and cited in the DEIS (pages 5-78 and 5-90). The new draft guidance explains that agencies should consider both the potential effects of a proposed action on climate change, as indicated by its estimated greenhouse gas emissions, and the implications of climate change for the environmental effects of a proposed action.

The DEIS reflects an understanding that climate change will increase flood risk to the study area. The DEIS states that the action alternatives were formulated using Engineer Regulation 1100-2-8162, Incorporating Sea Level Changes in Civil Works Programs,[4] curve two to account for sea level change over the design life of the project (page 3-27) and that further analysis of alternative rates of sea level change will be conducted during plan refinement. ER 1100-2-8162 acknowledges that sea level change can cause impacts to "shifts in the extent and distribution of wetlands and other coastal habitats, changes to groundwater levels, and alterations to salinity intrusion into estuaries and groundwater systems." It is clear that these models were used to determine the required levee heights and design features, but it is unclear if these models were used in informing the analysis of environmental impacts listed above for all action alternatives.

Beyond sea level change, the DEIS does not contain a discussion of potential climate change impacts to the watershed, including changes that could impact the timing and quantity of water flowing into the study area.

Recommendations: In the FEIS, update the Regulatory Framework section of the Air Quality and Climate Change section to reflect the new CEQ draft guidance.

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[2] http://www.epa.gov/otaq/standards/heavy-duty/hdci-exhaust.htm
[3] http://www.epa.gov/otaq/standards/nonroad/nonroadci.htm
[4] http://www.publications.usace.army.mil/Portals/76/Publications/EngineerRegulations/ER_1100-2-8162.pdf

Indicate whether and, if so, how sea level change was incorporated into the analysis of environmental impacts. Add a discussion of how climate change would contribute to the cumulative effects of the proposed project.

Executive Orders 11988 and 13690

The DEIS provides an evaluation of the alternatives in relation to Executive Order 11988, 5-360 Floodplain Management. It states that the objective of this Executive Order is "to avoid, to the extent possible, any long and short-term adverse effects associated with the occupancy and modification of the base flood plain (1% annual event) and to avoid direct and indirect support of development in the base flood plain wherever there is a practicable alternative" (page 7-4). Alternative 7a was determined to be in compliance with the Executive Order because it would improve levees that protect existing populations and infrastructure in North and Central Stockton.

On January 30, President Obama issued Executive Order 13690 – Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input, which amends Executive Order 11988. Section 2(a) of EO 11988 requires agencies to "consider alternatives to avoid adverse effects and incompatible development in the floodplains." Section 6(c) of amended EO 11988 requires that, rather than basing the floodplain on the area subject to a one percent or greater chance of flooding in any given year, the floodplain be established using one of the following approaches:

> *(1) Unless an exception is made under paragraph (2), the floodplain shall be:*
> *(i) the elevation and flood hazard area that result from using a climate-informed science approach that uses the best-available, actionable hydrologic and hydraulic data and methods that integrate current and future changes in flooding based on climate science. This approach will also include an emphasis on whether the action is a critical action as one of the factors to be considered when conducting the analysis;*
> *(ii) the elevation and flood hazard area that result from using the freeboard value, reached by adding an additional 2 feet to the base flood elevation for non-critical actions and by adding an additional 3 feet to the base flood elevation for critical actions;*
> *(iii) the area subject to flooding by the 0.2 percent annual chance flood; or*
> *(iv) the elevation and flood hazard area that result from using any other method identified in an update to the Federal Flood Risk Management Standards.*

We recognize that EO 13690 was signed only a few weeks before the DEIS was published, and that implementation guidelines may not be finalized until after the FEIS is published or Record of Decision is signed. The DEIS, therefore, does not take the new standards into account or discuss their potential applicability to various flood risk management measures. It is unclear whether or how implementation of the forthcoming guidelines would alter the alternative selection or design process for the selected alternative. It is also unclear how the costs and benefits of the proposed project could change based on the new floodplain criteria.

Recommendation: Address EO 13690 in the FEIS, and discuss its potential implications over the twelve year design and implementation horizon for the project, including how project costs and benefit-cost analyses could be affected.

Reuse of Dredged Material

The DEIS estimates that 1.8 million cubic yards of borrow material could be required to construct the entire project (page 4-26) and states that sufficient quantities of materials are available within 25 miles of the project. The document does not identify specific borrow sites, other than to say that fill material would be obtained from local construction borrow areas and commercial sources. Reusing dredged material is a shared goal of USACE and EPA.[5] Ongoing USACE projects generate the vast majority of dredged material in the Delta, and past USACE dredging accounts for most of the stockpiles of previously-dredged material around the Delta. This project represents an opportunity to access and reuse stockpiled dredged material.

> ***Recommendations***: In the FEIS, evaluate the suitability of existing USACE dredged material stockpiles for construction of the project. Commit to maximize the use of already stockpiled dredged material.

Alternatives for Erosion Control

The DEIS includes rock slope protection (also known as riprap) for all of the alternatives, and states that other erosion methodologies may be explored during the Preconstruction, Engineering, and Design phase (page 4-7). In 2004, the U.S. Fish and Wildlife Service published an updated report, *Impacts of Riprapping to Aquatic Organisms and River Functioning, Lower Sacramento River, California*, that documents the negative effects of rock slope protection. Possible alternatives to riprapping are suggested in the FEMA brochure *Engineering with Nature: Alternative Techniques to Riprap Bank Stabilization.*

> ***Recommendation***: Explore additional alternative methods of erosion control in the FEIS, including bio-engineering, hydro-seeding, controlled planting, and construction of engineered logjams. Include a discussion of which alternative methods are compatible with USACE vegetation policy and meet project needs.

Consultation and Coordination with Tribal Governments

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments (November 6, 2000), directs federal agencies to establish tribal consultation and collaboration processes for the development of federal policies that have tribal implications, and is intended to strengthen the United States government-to-government relationships with Indian tribes. The DEIS describes USACE efforts with regard to tribal consultation and states that the California Valley Miwok Tribe requested Government to Government consultation and that the Nototomne/Northern Valley Yokuts requested additional information (page 5-354). Neither tribe is included on the list of recipients of the DEIS (page 10-1). The DEIS states that copies of the correspondence related to tribal consultation and the draft Programmatic Agreement can be found in Appendix B.3; however, EPA was unable to locate the documents.

> ***Recommendation:*** In the FEIS, discuss the status of consultation with tribes affected by the project and the impacts and mitigation measures identified through that consultation. Include the tribes in the distribution list of the FEIS and Record of Decision.

[5]National Dredging Team Charter:
water.epa.gov/type/oceb/oceandumping/dredgedmaterial/upload/2003_12_05_oceans_ndt_publications_2003_charter.pdf